NITE-TIMES NEWS

CHICAGO AREA TIMEX USERS GROUP

Chicago Area Timex Users Group — Downers Grove, Illinois
Volume 7, Number 1 — January/February 1993

MEMORY MAP

C.A.T.U.G. CLUB OFFICERS

Here is the list of 1993 club officers and how to contact them. The club has two strong SIGs, SPECTRUM/TS2068 and QL. If you have questions about either of these fine machines or even the ZX81/TS1000/TS1500 call one of the officers. C=312, S=708.

POSITION	NAME	PHONE	PRIMARY FUNCTION
President	Nazir Pashtoon	S439-1679	The buck stops here...
Vice-President	Steve Cooper	S968-3553	Meeting Planning, etc.
Secretary	Jim Brezina	S832-1782	Records and Reporting
Treasurer	Frank Mills	S544-1918	Dues and Purchasing
Editor	Bob Swoger	S576-8068	Newsletter, BBS, etc.

Nite-Times Information

The Nite-Times News is the newsletter of the Chicago Area Timex Users Group. For an annual fee of $12.00 you can become a CATUG member and receive six newsletters each year. Write your check payable to:

FRANK MILLS
417 S 47th AVE
BELLWOOD IL 60104

The Chicago Area Timex Users Group is pleased to exchange newsletters with other Timex and Sinclair supporting user groups at no charge. Send all newsletter requests to:

CATUG EDITOR BOB SWOGER
613 PARKSIDE CIRCLE
STREAMWOOD IL 60107-1647

If you desire to reprint any articles that appear here, please provide credit to the author and this newsletter.

We encourage your user group to copy this newsletter and distribute it at your regular meetings to your members free of any charge as we believe that this will encourage better meeting attendance. If you are a user group that feels as we do, please let us know in your newsletter so that we might do this for our members and keep our attendance up.

Articles originating from our group may be downloaded from our BBS and reprinted.

CONTRIBUTORS TO THIS ISSUE

Cedric Bastiaans
Jim Brezina
Bill Harmer
Larry Kenny
Frank Mills
Bob Swoger, K9WVY

CLUB MEETINGS

The Chicago Area Timex Users Group meets on the THIRD Saturday of each month at the home of our meeting coordinator Steve Cooper in Downers Grove, Illinois from 1:00 to 5:00 PM. Steve's home is lovingly called the CLUB HOUSE and is located at 1300 Maple Street in Downers Grove just 2 blocks southwest of the Downers Grove Public Library. Steve should always be contacted evenings at 708/968-3553 to confirm the meeting schedule.

TREA$URY NOTE$

The balance as of Feb. 28, 1993 is $359.97 Our current paid membership stands at 18.

Frank Mills, Treasurer
Chicago Area Timex Users Group

SECRETARY'S NOTEPAD

January 16, 1993

Meeting was called to order at 2:19 P.M. Those present were Frank Mills, Abed Kahale, Bob Swoger, John Donaldson, Steve Cooper, Nazir Pashtoon, and Jim Brezina. Dues were collected and new member Ivan Zachev was announced and welcomed.

Bob stated he got a call from Gary Lessenbary who updated us on the current lives of Jay Seigel and Pete Fischer.

The Curnutts sent in their dues for 1993 to Bob Swoger. Bob had mentioned to Tim Swenson that we hadn't received two issues of CATS newsletters so Bob and Audrey graciously sent us the missing issues and also informed us that they had not received their issues of our newsletters. THANKS FOR ALL THE HELP, BOB AND AUDREY! YOUR ISSUES ARE COMING.

Abed noted that at least three of the utilities on the CHAMBERS UTILITIES for LarKen disk have never worked on his system. Bob stated that he would try to fix them before the next meeting. They are loader.B1, erase.B1 and recovr.B1. Bob also told us that an earlier attempt to fix recovr.B1 failed.

Swoger also received a letter from George Chambers about a fellow out in California named Barton looking for a LarKen version 3 DOS ROM for RAMEX DISK OPERATING SYSTEM. Swoger called Larry Kenny. Larry was married in October. Larry said the only copy he had left was sent to RMG. Rod said he had sent it back to Larry. The fellow from California is waiting for a ROM that works with LogiCall so that he might use LogiCall ensemble.

Bob announced the coming of the 2nd Annual Last COCOfest on May 2nd and May 3rd at Holiday Inn in Elgin.

The meeting was adjourned at 2:46 P.M. Larry Sauter showed up at 3:29 P.M.

February 20, 1993

Before the meeting Abed adjusted the pots in Steve Cooper's TS2068's for best color rendition. For the first time we saw CYAN and YELLOW on a TS2068!

Meeting was called to order at 4:05 P.M. Those present were Frank Mills, Bob Swoger, Steve Cooper, Abed Kahale, Jim Brezina, Larry Sauter.

Bob Swoger reported that he had received a number of calls. One was from Wayne Knaust in Missouri who had a TS1000. He wanted the schematic of the TS2040 printer. CATUG will send him that schematic.

Ike Walker read of our plight of not receiving the newsletters of many groups and sent us his own copied to help us fill out our missing issues.

Noted was the fact that Al Feng has not yet sent us his address and phone number!

Bob mentioned an ad from EMSOFT in Update magazine that EMSOFT was dropping QL software and was selling it for half price until the end of March after which he doesn't know what he's going to do.

The meeting was adjourned at 4:40 P.M.

James F. Brezina, Secretary
Chicago Area Timex Users Group

FROM THE EDITORS DISK

Hello, members, one and all! We have come to the beginning of another year with our members still interested in the new things we are learning about our ZX computers every day. There still seems to be no end to it. Joan Kealy informed Don Lambert that she had been using a disk from the TTSUG library that booted up in the Spectrum mode without holding down the 'K' key on boot up. I don't know how to do that but I will look into it, sounds handy.

I have been trying to find more disk drives for our TS2068 machines and have found a few new leads for them showing up at computer fests this year. I'll be on the look-out!

George Chambers wrote asking how to modifying the Tasman 'B' printer interface to make it compatible with the LarKen disk system. I thought that this modification was common knowledge in the LarKen

community! So, included in this newsletter is the instructions for the LarKen Tasman 'B' modification. I use the Tasman 'B' CPI to do my Christmas return labels because AERCO CPI can't do the job!

We have a new BBS available to us this year courtesy of the Motorola MicroComputer Club of Schaumburg/Arlington Heights. Look for the new phone number in this issue.

Bob Swoger, Editor
Chicago Area Timex Users Group

GATOR's TWISTED PAIR

! ! ! R E M E M B E R ! ! !
We have a 24 hour BBS and encourage you to exchange mail and contribute to the Download Section. Use it and have fun!

Call the BBS at 708-632-5558 and register. On your next call your security level will be increased to 5 on this RBBS and you will be able to have most privileges.

Bob Swoger, SYSOP
Chicago Area Timex Users Group

ITEMS FOR SALE THROUGH THE CLUB

It has come to our attention that some LarKen Users are using something less than Version 3 firmware. The club will supply updated EPROMs, SYSTEM DISKS, and MANUALS for just $5 which includes shipping and handling, free if ordered with LogiCall or Spectrum ROM.

==========

If you are a LarKen LKDOS owner and would like a SPECTRUM V2 kit for your system we will supply an EPROM, socket and 74HCT32 for $12 which includes shipping and handling. The install instructions are in your LarKen manual. We shall not be responsible for your install job. AERCO owners need only the SPECTRUM EPROM for $10

==========

If you have a mismatch between you LarKen DOS EPROM and your Western Digital Controller chip, we will send you the correct one for free on behalf of our friends Rod Gowen of RMG and Larry Kenny of LarKen. You should be using L3 EPROMs with WD1770 controller chips or L3F EPROMs with WD1772 controller chips. Check it out! Call in requests to Bob Swoger at W708-576-8068 H708-837-7957

SPECIAL DEALS AND BUYS

NAP_Ware (Nazir A. Pashtoon's new endeavor) announces the availability of all Timex or QL PAL (Programmable Array Logic) chips. If interested, call him evenings on 708-439-1679.

==========

LogiCall Integrated Software Ensemble easy operating system for LKDOS in both TS2068 and Spectrum modes includes LogiCall 5.0 TASWORD TWO V2.8, VU-CALC V1.6, VU-FILE and MTERM2 Drivers modified for LogiCall, DISKS.B1 TAPES.B1 steprt.B1 HEADER.BT (tape header reader by Nazir Pashtoon) FORMAT.B_ MOVE.BL and more all on 2 SSDD disks for $15. You must specify your LKDOS EPROM version. If you already have a copy you are encouraged to distribute copies to other LarKen LKDOS users for as you see by the price we are not in the business of making money on it, just making LarKen's LKDOS even better! Call in requests to Rod Gowen of RMG Enterprises.

==========

So you like to fly? The 747 Flight Simulator for Spectrum by Derek Ashton of DACC sold over 40K copies in EUROPE. Requires Spectrum Emulator. At this time supplied on LarKen SSDD disk only for $10 which goes to Derek Ashton, now working at MOTOROLA with Bob Swoger. Call in requests to Bob at W708-576-8068 H708-837-7957

ARTICLES

Make the Tasman 'B' CPI Work With the LarKen DS-400

by Larry Kenny and Bob Swoger

George Chambers wrote to say: "We have been looking at the possibilities, i.e. reasonableness, of modifying the Tasman 'B' printer interface to make it compatible with the LarKen disk system. Presently there is some sort of a port conflict and the LarKen will not function when this particular model of printer interface is connected. The question is, does anyone know what port addresses the LarKen system uses?" Here is the answer on how to use the Tasman 'B' CPI from Larry Kenny himself. The problem is not really a port conflict. Instead, the problem is that the Tasman 'B' CPI does not completely decode the address bus. The Tasman 'B' has an input port of 191 but A7 is not being looked at by the CPI to come to this conclusion! If my mailman only looked at the first two numbers of an address and gave me all mail that began with '61', my address being '613', I would wind up getting a lot of wrong mail. That is the Tasman CPI problem.

Larry favored the AERCO CPI because it completely decodes the address bus, but he made provisions for Tasman 'B', A & J and others if they were modified. I like the Tasman 'B' because it can send all bytes to the printer from 0 to 255 and the AERCO can't. So I have modified my Tasman 'B' CPI for LarKen compatibility to run my Christmas Return Label program. It should be noted that this fix will not work for the Tasman 'A' or Tasman 'C'.

To make the Tasman 'B' CPI work with the LarKen disk System, acquire a 74LS04 quad NAND and some small gauge insulated hook-up wire. Open the Tasman 'B' CPI by first carefully peeling back the plastic label away from the screws. (If you pick up the ends carefully with an X-ACTO knife, the label will press back over the screws when you are done without even a wrinkle.)

Remove the four screws that hold the case together and open the case. Examine the PC board to be certain that you have a 'B' version Tasman CPI. It is a 'B' if it is labeled 'VERSION B'.

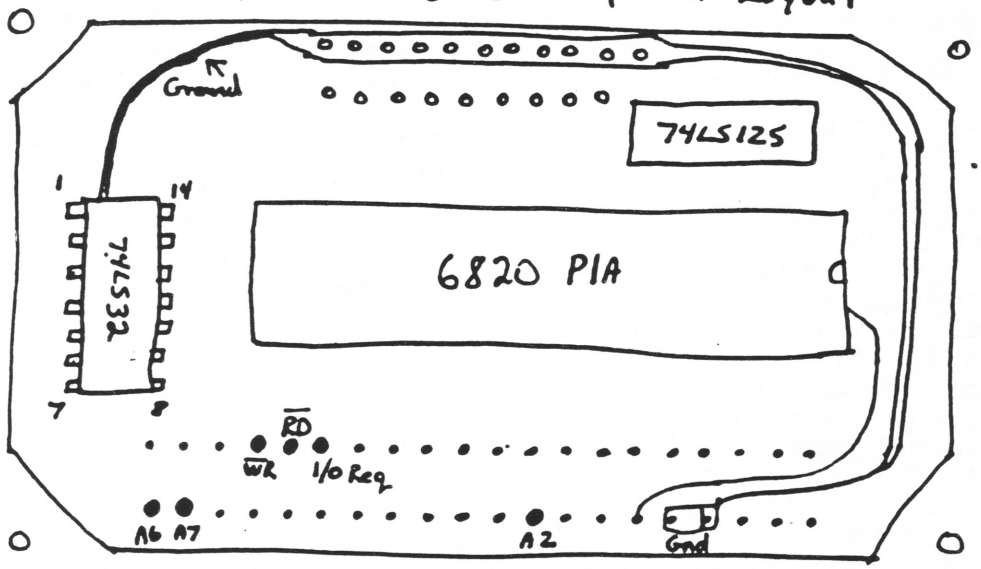
Next, make the trace cut of A6 on the underside of the PC board close to board edge connector with the X-ACTO knife. Now follow the rest of the instructions Larry has given us on the drawing. When you are finished, carefully check all connections against Larry's drawing. I didn't and had to go back in to fix my problem. Finally, close the case and press the plastic label back into place.

As for the port addresses of the LarKen system, I don't know them, but here are the CPI addresses from 'The Best of SUM', the newsletter-turned-magazine of the Gainsville Sinclair Users Group by Joe Williamson and Richard Cravy:

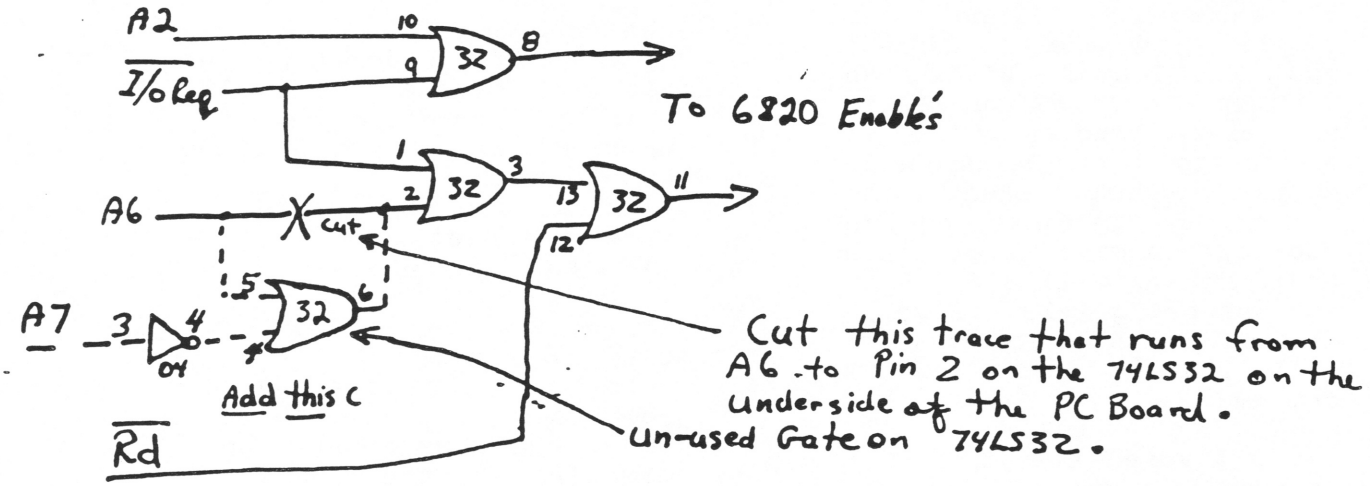
	PORT	
Type:	IN	OUT
AERCO	127	127
Tasman 'A'	63	123
Tasman 'B'	191	123
Tasman 'C'	251	123

Decoding the Tasman B+C for use with the Lerken Disk IF

Tasman B+C Component Layout



Tasman 'B' modification : Parts needed - 74LS04
- fine wire



- Bend all of the pins on the 74LS04 up, (except pins 4, 7 and 14)

and stack it on top of the LS32; Solder pins 4. 7 and 14 to pins 4, 7 and 14 of the LS32

- Connect A6 on connector to pin 5 on the 74LS32 with a wire.
- Connect A7 on the connector to pin 3 on the 74LS04 with wire.
- Connect pin 2 on 74LS32 to pin 6 on 74LS32.

Fix the ZX-81/TS1000 Loose Jack Problem

by Bill Harmer

The three jacks on the side of this computer that accept MIC., ear and power plugs are of a somewhat flimsy construction that may become apparent after a few years of use (or earlier on rough usage). The cure is fortunately rather simple for the mechanically/electronically handy user or technician.

Step 1 - Take the bottom half of the case off (without removing the printed circuit board inside or the keyboard membrane plastic sheet at this time) There are 5 screws that must be removed from the bottom of the case. This is not as easy as it might seem as only 2 are visible. The other three are found under the rubber feet (rectangular strips glued on the rear corners). These can be simply pulled off in order to remove the screws under them. Once the screws are completely removed, the bottom half of the plastic case should separate with only light prying. Any force indicates that the screws are not completely removed.

Step 2 - The printed circuit board is now secured to the top half of the plastic case by two screws. See where they are (upper to mid-left near the RAM pack opening and near the center, more towards the middle of the case, typically). For reassembly, note where they came from, with a soft pen, say). The printed circuit board must be moved up and away from the top half of the case about one or two inches only (so as not to disconnect or damage the fragile keyboard matrix/ membrane plastic from the connector on the board).

Step 3 - Holding the printed circuit board so that one can see the three little plastic boxes that house the jacks, any prongs that are bent too far up and out, may be carefully pushed back into position with a small screwdriver or tooth-pick. Several pushes back may be necessary until the springiness is overcome in its attempt to reposition the prong outwards. Now test the jacks with the cable for the cassette recorder (no power applied) for mechanical fit.

Step 4 - Now you are ready to reassemble the computer making sure that the screws for the printed circuit board are not inserted in the holes meant for the screws that hold the outside bottom shell of the case. If you put one or both of the set screws in the wrong place, the screws will not go in when you try to screw the back on again and all the screws on the outside will have to be removed and the bottom taken off again to find the source of the problem. Do not disconnect the little metal bar or whatever; that ground contact with the metallic paint inside the case that provides some measure of protection from RFI for the TV. etc. on VHF models of the computer.

Step 5 - Once the printed circuit board is secured inside the case with its two screws and the bottom of the case secured with its five screws and the little rubber feet or runners stuck back on, you are ready to test the computer to see if the original problem is fixed (and no new ones added). Note that loose power jack into the computer can also cause the save/load crashes and some users have either tightened up that jack too, or replaced it with hardwiring the power supply wire to the P.C.B. and adding some safety device like a switch on the power line or pilot light (standard LED and 1/2 watt, 1K ohm for example) to make sure it is not left on.

Reprinted from the February 1986 LIST

KEYBOARD MANIA — Part 1

By Cedric R. Bastiaans

I. INTRODUCTION

Sir Clive, the man who brought powerful, but affordable computers to the masses (and still does, in mainland China for instance), appears not to be too pre-occupied with keyboards. Both the ZX80 and the 81 sported so-called membrane keyboards. Granted, they are inexpensive and quite reliable, but they really have no business being on a computer. They are user- UNfriendly and only belong on appliances, where the "keys" get activated only once in a while (blenders, toaster ovens and the like).
Membrane keyswitch assemblies are still around, but they have come a long way, now with full travel actuating keys. It is the membrane keyboard, which is directly activated by human fingers, that I despise. The Commodore 64 would not have enjoyed its immense worldwide popularity, if Jack Tramiel would have given it a membrane KB like the ZX81 (or TS1000).

Anyway, I think that a real, full travel keyboard (KB) is a must for any computer! It was one of the first things I did, back in 1981: put a professional KB on my ZX81. I still have it; it has 10 dedicated keys, i.e. keys that effect functions that would otherwise require the actuation of two keys simultaneously.
I know that many amongst you think that the TS2068 KB (which is not a membrane keyboard, but is not a full travel type either), is heaven compared to the KB on the ZX or TS1000. It is without a doubt a great improvement, but it still is a very inadequate KB for computers, certainly if the machine is used for word processing. Should I remind you of the so-called space bar with its annoying problems of sticking and multiple spaces or not working at all unless you hit it dead center? If you have never worked with a real KB, you just don't know how pleasurable keying on a full travel KB is. Even the QL, with its membrane KB activated by wobbly rubber blocks is far from meeting the criteria of a pro KB.
I have improved a couple of computers with pro keyboards and would like to share with you a couple of circuits I have used for dedicated keys, give some pointers on KB's in general and suggestions on improved keytops, all for the TS2068.

II. CHOICE OF KEYBOARD

The KB should be of the mechanical switch type, with full travel keys and positive action. There are many surplus or reject KB's available from a variety of sources. Make certain that you get one with straight electrical contacts, so-called single-pole,single-throw (SPST) types. There are KB's that use exotic ways of "making contact", such as the ones using capacitive or Hall-effect "switches". Not only are these expensive, but they are also very difficult to adapt to our needs.
Also, don't buy so-called ASCII-encoded KB's; the electronic circuitry on it is not needed and therefore wasted. Sometimes though, they can be had real cheap; just make sure that the keys are SPST mechanical switches and discard the electronics.
And beware of membrane KB's (even though they might be of the full travel type), because their matrix is practically always part of the flexible membrane printed circuit. Since it can not be expected that the matrix of a keyboard, not originally built for a TS computer, would be identical to the matrix we need, you should expect having to modify the printed circuit board (PCB) of the KB you acquire. This entails cutting copper traces and making new wire connections. And that is something impossible to do with the membrane circuit.
As I am writing this (Dec.15'85), Radio Shack has a special purchase item 277-1020, a 75-key KB selling for $6. It is a membrane type with very good and light-touch, full travel, beautifully sculptured keys. It has however, an incompatible matrix and it can not be easily modified. A real pity...

As far as the tactile "feel" of the KB keys goes, that is a matter of personal taste, but maybe I can give you some guidance. One of the very best KB "feels" can be experienced with the KB of the Canon Typest*r 5 electronic typewriter.

You could therefore enter a store which carries them and try one out. Who knows? Maybe you will even buy one! (I think it's a fabulous typewriter).
But since you are a member of that masochistic lot, also known as Sinclair computer addicts, and have endured pain with chintzy KB's for heaven knows how long, you probably would go "gaga" about any full travel KB!
A good source for surplus keyboards is Jameco Electronics, 1355 Shoreway Road, Belmont CA 94002; their item KB54, a 54-key KB sells for $10.
Another one is ITC, 9119 De Soto Avenue, Chatsworth CA 91311, but they have no catalog and do not accept mail orders.

III. KEYBOARD MATRIX

In the foregoing, the word "matrix" has been used several times and therefore requires explanation, in case you don't already know. The TS2068 has 42 keys, but 2 of them are in duplicate and wired in parallel, CAPS SHIFT and BREAK (or SPACE), so that a matrix of three groups of lines, one with 5 and two of 4 lines each, can be and is indeed used to enter the 40 (=5x2x4) principal key functions.
This matrix is shown in Figure 1.

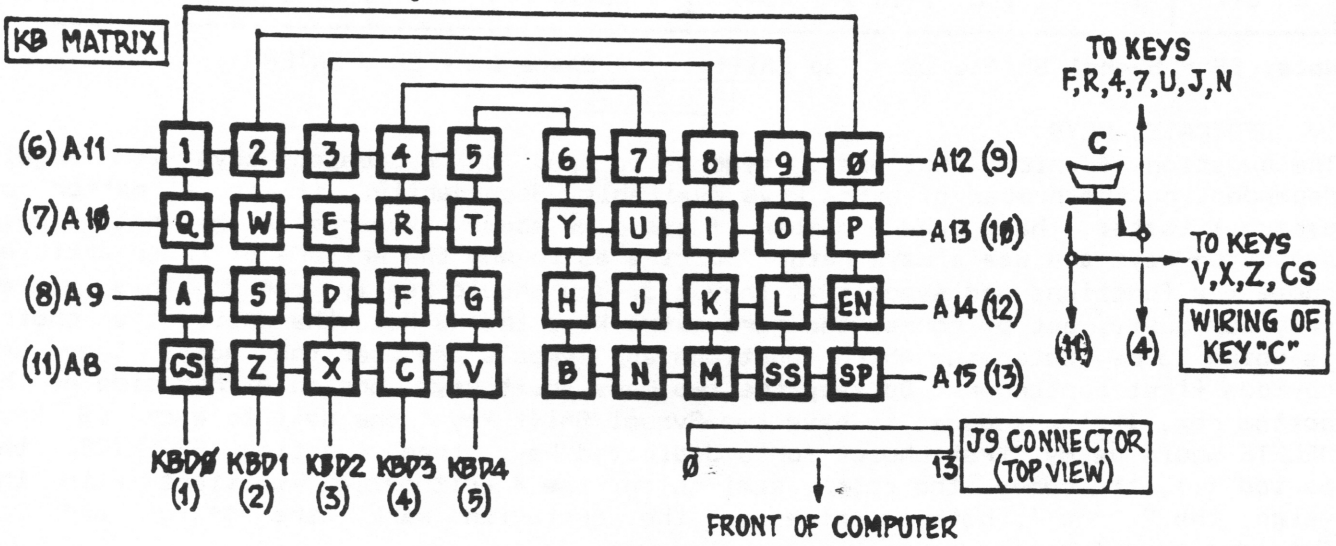


FIGURE 1

Each block depicts a key and is marked with the principal character on that key. Whenever a key is pressed, the two lines intersecting at the corresponding block become electrically connected. If you would press key "5", lines A11 and KBD4 will connect, whereas pressing "6" joins lines A12 and KBD4. This matrix will be helpful in modifying the printed matrix of any suitable surplus KB you might purchase.
Incidentally, the matrix for the ZX81/TS1000 is almost identical to the matrix shown in Fig.1; the only difference is that a "period (.)" key is in place of the Symbol Shift key, and the line numbering is different.

Since we deal with logic circuits and extremely low electrical currents, the key contact need not have the low resistance normally encountered in mechanical switches. A contact resistance of several hundreds of ohms will still generate the desired function and under certain conditions will even be beneficial, as we will see later.

The lines connect to the 14-pin KB Interface Connector J9, which is on the main PCB inside the computer. This connector has .100" pin spacing and normally mates with the flex cable of the original TS2068 KB, but the surplus KB can easily be connected with a flat cable and a connector made of headers for socket connectors, which come in strips of 36-pin size, notched for easy breaking to desired length. If you wish, you can of course unsolder and discard connector J9 altogether and solder a flat cable, much like an umbilical cord of the KB, directly to the computer's PCB.
The connector pinout is also shown in Fig.1; #0 is ground, the remaining 13 (=5+4+4) pins are the KBD and A lines and these pin numbers are also shown in parentheses near the line identifications of the matrix.

The illustration also shows how the two terminals of each key-switch should be connected to the lines.

To facilitate the choice of connections and circuits for dedicated keys, and also the check-out of matrix wiring after it has been modified, the table of Fig.2 has been composed. It shows for each principal character and function, the required connections, which are indicated as groups of pin-out numbers of J9.
Thus, if for instance the Symbol Shift key is pressed, pins (or lines) 2 and 13 should show an electrical connection, which opens up again when the key is released.

A 1+8	F 4+8	K 3+12	P 1+10	U 4+10	Z 2+11	5 5+6	0 1+9
B 5+13	G 5+8	L 2+12	Q 1+7	V 5+11	1 1+6	6 5+9	SS 2+13
C 4+11	H 5+12	M 3+13	R 4+7	W 2+7	2 2+6	7 4+9	CS 1+11
D 3+8	I 3+10	N 4+13	S 2+8	X 3+11	3 3+6	8 3+9	SP 1+13
E 3+7	J 4+12	O 2+10	T 5+7	Y 5+10	4 4+6	9 2+9	EN 1+12

Note: SS = Symbol Shift; CS = Cap Shift; SP = Space Bar; EN = ENTER

FIGURE 2

IV. DEDICATED KEYS

The question of which functions or symbols to put on dedicated keys is largely dependent on the number of extra keys available. Secondarily, it is a matter of personal taste; I have read a number of articles about keyboards with some simple dedicated keys and was always rather puzzled as to why the writers of those articles chose the functions and symbols as they did. You should really ponder this matter very seriously, but of course the more extra keys the KB has, the easier the choice is going to be. Determine which functions and symbols are used the most; they are obvious first contenders. Do keep the two Caps Shift keys, one on either side of the bottom row. I also suggest to have two Symbol Shift keys, one next to each CS key. DELETE would be my first choice for a dedicated key, then function GRAPHICS, the period (.), the comma, the colon, semi-colon, the 4 arithmetic functions with the =sign, the ?, the !, both parentheses, the quotation mark, the $-sign and the Extended Mode function.
The table of figure 3 shows suggested functions and symbols, together with the required KBD and A line junctions, again expressed in terms of the J9 pin numbers. Because they require the simultaneous actuation of either the SS or the CS keys, the required junctions each show TWO groups of connections, the first one of which is for either of these shift functions.

? 2+13/4+11	; 2+13/2+10	= 2+13/2+12	(2+13/3+9	← 1+11/5+6	ED 1+11/1+6
! 2+13/1+6	+ 2+13/3+12	↑ 2+13/5+12	) 2+13/2+9	→ 1+11/3+9	CL 1+11/2+6
. 2+13/3+13	- 2+13/4+12	" 2+13/1+10	@ 2+13/2+6	↑ 1+11/4+9	GR 1+11/2+9
, 2+13/4+13	* 2+13/5+13	' 2+13/4+9	# 2+13/3+6	↓ 1+11/5+9	DE 1+11/1+9
: 2+13/2+11	/ 2+13/5+11	$ 2+13/4+6			EM 1+11/2+13

Note: ED = EDIT; CL = CAPS LOCK; GR = GRAPHICS; DE = DELETE; EM = EXTENDED MODE

FIGURE 3

The table shows for instance that in order to create the $-symbol, pins 2 and 13 should be connected (Symbol Shift), as well as at the same time pins 4 and 6 (the "4"-key). Another example is the semicolon; this character requires that pin 2 is again to be connected to pin 13 (SS), but ALSO to pin 10 (the "0"-key).
Still another example is the multiplication or asterisk symbol *; it requires that pin 2 should connect to pin 13, which in turn should also connect to pin 5 ("B"-key).
With the help of the table Fig.2 you can of course determine the junction combinations necessary for any symbol or function not shown in the table Fig.3.

In the next installment of this article series we will discuss exactly how to effect all these connections.